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ABSTRACT

The economic effects of Government spending at public installations in rural areas was investigated. Fort Leonard Wood, Missouri, was chosen because of its location in a low-income rural area with relatively high outmigration, a declining agricultural industry base, and few employment opportunities. All of the data relating to Government spending at the Fort were obtained through various personnel at Fort Wood, with the Comptroller's office furnishing the majority of the data. A mail questionnaire was used to determine commuting patterns of civilian employees. From a total of 362 persons chosen at random from mailing lists of employees supplied by the data processing office at Fort Wood, 190 completed questionnaires were returned. Specific topics discussed were the economy of the area; the population migration in Laclede, Miller, Phelps, Pulaski, and Texas counties; the military payroll, the civilian payroll, impacted area funds, and the retail sales taxes at Fort Wood; and the employment multiplier. Specific conclusions were discussed under each topic heading. (HBC)

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THE IMPACT OF PUBLIC SPENDING IN A LOW-INCOME RURAL AREA:

A CASE STUDY OF FORT LEONARD WOOD, MO.

RC006833

ECONOMIC RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE
IN COOPERATION WITH
MISSOURI AGRICULTURAL EXPERIMENT STATION
UNIVERSITY OF MISSOURI

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Special thanks are extended to the Comptrollers at Fort Leonard Wood and especially to Colonel D. L. Rush, who was Comptroller when this study was initiated, for providing the necessary data.

This study was done in cooperation with the University of Missouri.

Washington, D. C. 20250 June 1968

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HIGHLIGHTS

Fort Leonard Wood has a direct economic impact on nearly 50,000 people and indirectly affects approximately the same number. The people working or living on the Fort and hence directly affected by Government spending total over 35,000 in the military service, 4,000 civilian employees of the Department of the Army, and about 8,000 military dependents. More difficult to assess is the impact which a public installation such as the Fort has on various segments of the private and nonmilitary public sectors of the local economy.

The total impact which the Fort exerts on employment was determined using employment multipliers which estimate the change in total employment which occurs when new jobs are created. The multipliers obtained ranged from 1.89 for nearby Texas County to 3.11 for Pulaski County, where the Fort is located. In Pulaski County, the multiplier technique indicated that 73 percent of all employment was related to or dependent on activities at Fort Leonard Wood.

The Fort has little direct impact on the agricultural economy, as little of the agricultural production of the immediate area is consumed at the Fort. However, employment created by the Fort enables some farmers to become part-time farmers and hold full or part-time jobs off the farm. Employment in the agricultural industry has dropped in all counties adjacent to the Fort.

Most of the central Missouri counties experienced a net outmigration of their population during the decade ended in 1960. The only counties with in-migration were those containing Springfield, Rolla, the Lake of the Ozarks, and Fort Leonard Wood. All counties from Fort Leonard Wood to St. Louis through which U.S. Highway 66 passes have experienced an increase in population. Counties between Fort Wood and Springfield have had a net outmigration.

Payments to the military and civilian personnel at the Fort were reported in excess of $65 million for the fiscal year ended June 30, 1966. Between $40 and $45 million of this payroll was probably spent in the Fort Leonard Wood area. Counting payrolls and various Government purchases, total expenditures at the Fort exceed $100 million annually. However, the peculiarities of a military post are such that much of the development normally expected from an expenditure of this size does not materialize.

The payroll at Fort Leonard Wood is considerably different from that of other types of Government installations. About two-thirds of the military personnel at the Fort receive about $1,200 a year. The remaining one-third, while higher paid, still have average annual incomes of less than $5,000. These are really net incomes and must be considered as such when comparing them with earnings of civilians in other types of public installations.

Because of the facilities provided on most military posts, other differences affect the impact of Government payrolls. At Fort Leonard Wood, virtually all military personnel live on-post. Hence, very little private housing has been developed in the surrounding areas. Residence on-post also makes it easier for military personnel to utilize such services as the Post Exchange, commissary, hospital, banks, churches, library, and auto service stations, as well as theaters, bowling alleys and other recreational and service facilities. In a university town, or around a public health facility such as a veterans' hospital, the development of such facilities would be performed mostly by private enterprise. Total employment generated may be the same, but the development occurs differently on a military post than it would around a veterans hospital.

Some facilities are not provided by the Fort. Water-oriented recreation can be found at the Lake of the Ozarks about 50 miles from Fort Leonard Wood. Columbia, Springfield, and St. Louis also draw military personnel on leave.

Another service not restricted to the Fort is the development of the public schools. Over 4,000 school-age children are added to nearby school systems because their parents are stationed at the Fort or because a parent is a civilian employee at the Fort.

This has necessiated an extensive building program and an enlargement of the teaching staff in nearby Waynesville, as well as in a few other nearby school districts. Over $1 million in Federal aid comes into the local school systems annually.

Considerable expansion has also been noted in the motel business, since virtually no overnight accommodations are provided by the Fort.

THE IMPACT OF PUBLIC SPENDING IN A LOW-INCOME RURAL AREA: A CASE STUDY OF FORT LEONARD WOOD, MO.

By

O. Wendell Holmes 1/

INTRODUCTION

In many rural areas, the industries with a physical resource base provide employment for only a few workers and the number employed is decreasing. Normally, outmigration of young families occurs and the population decreases. Yet some rural areas are experiencing an increase in population, largely because of investments of public funds in Government facilities such as schools, research centers, and military posts.

The economic contribution such facilities may make to the economy of an area is not fully known. The impact may be great in an area which has had relatively high outmigration, low incomes, high unemployment, and high underemployment.

This study was initiated to investigate the economic effects of Government spending at public installations in rural areas. Fort Leonard Wood, Mo., was chosen because of its location in a general economic problem area. The area surrounding the Fort is a low-income rural area with relatively high outmigration, a declining agricultural industry base, and few employment opportunities.

THE STUDY AREA

Fort Leonard Wood is located in south-central Missouri. It is the largest of 16 U.S. Army trainee centers giving basic combat, advanced individual, and combat support training. It is located a short distance south of Interstate Highway 44 (U.S. 66), in Pulaski County (figure 1). The nearest town, Waynesville (population 2,811), is located about 5 miles from the Fort. Rolla (population 8,220) is located 27 miles northeast of Waynesville and Lebanon (population 11,132), 32 miles southwest. The nearest metropolitan center is Springfield, 85 miles southwest. The St. Louis metropolitan area is 135 miles northeast. The area is also served by a number of State highways and other all-weather roads.

Except for the Fort, few employment opportunities exist in the area for people wanting off-farm jobs. Using the home addresses of civilians employed at the Fort as an indicator, five counties are believed to be

1/ Economist, Economic Development Division, Economic Research Service.

STUDY AREA IN MISSOURI
Fort Leonard Wood
Study Area
WEBSTER
WRIGHT
TEXAS
CRAWFORD
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Figure 1

greatly influenced by employment opportunities at the Fort (table 1).

Table 1.--County of residence of civilian employees at Fort Leonard Wood, November 1966

County	Number of employees	County	Number of employees
Crawford	8	Miller	132
Maries	13	Texas	365
Webster	13	Laclede	421
Dent	16	Phelps	459
Camden	31	Pulaski	1550
Wright	33		

Source: Office of the Comptroller, Fort Leonard Wood, Mo.

These counties are Laclede, Miller, Phelps, Pulaski, and Texas. The large number of civilian employees in Pulaski County results because of the Fort's location in that county. The next two highest counties, in terms of employee residence, Phelps and Laclede, are located about equidistant from Fort Wood on Interstate Highway 44, and serve as residential communities for many employees. Miller and Texas Counties are located respectively north and south of Pulaski County and are connected to Pulaski County by paved all weather highways. Camden and Maries Counties, although adjacent to Pulaski, have poorer road connections than the other adjacent counties.

METHOD OF STUDY

All of the data relating to Government spending at the Fort were obtained through the cooperation of various personnel at Fort Wood, with the Comptroller's office furnishing the majority of the data.

Secondary sources of information were used in the analysis of agriculture, population and migration, and recent economic developments in the area.

A mail questionnaire was used to determine commuting patterns of civilian employees. Questionnaires were sent to 362 persons chosen at random from mailing lists of employees supplied by the data processing office at Fort Wood. Completed questionnaires were received from 190 persons.

Most of these workers live at least 8 miles from the post. The average distance of 27 miles indicates that some employees travel long distances. Car pools are used extensively. Most of these commuters live in towns such as Crocker, Dixon, Houston, Iberia, Lebanon, Richland, Rolla, and Waynesville near major Federal or State highways. A few commute from as far away as Springfield.

Many of the people working at the Post were full-time subsistence farmers prior to their off-farm employment. Thus, their place of residence was determined by factors other than availability of employment at the Fort. Location and highway access seem to influence the place of residence of the civilian employees and hence, the area of the Fort's impact.

ECONOMY OF THE AREA

It is hypothesized that the Fort influences the economic life of several Missouri counties. These are: Camden, Crawford, Dent, Greene, Laclede, Maries, Miller, Phelps, Pulaski, Texas, Webster, and Wright. The greatest impact would be on Laclede, Miller, Phelps, Pulaski, and Texas Counties because of their proximity to the Fort.

With the exception of Greene County, which is influenced by the Springfield metropolitan area and is therefore excluded from the following discussion, all of the above counties are classified as rural counties, with over half of the population classified as rural residents.

A national classification of counties by median income places all of the counties mentioned above in the lower three income quintiles, on the basis of 1949 income. By 1959, four counties had moved up one quintile and the remaining seven stayed in their respective median income quintiles. This put all of the counties in a median income range of $4,527 or less in 1959 and 4 of the 11 counties in a range of less than $2,919. 1/

Although agriculture is the dominant industry of the area, farm income is low. Over 90 percent of the farm operators in the area reported sales of farm products of less than $10,000 in 1964. This would mean a net income to these people of $3,000 or less from farming. Some of these farmers obtained off-farm jobs in order to maintain an adequate level of living.

Since 1959, considerable change has occurred in the agriculture of the area. The average value of farm assets has increased in each county, as has the average size of farm for all counties except Phelps. In Laclede and Pulaski Counties, farm size increased by more than 14 percent from 1959 to 1964. The number of all farms has been decreasing but the number of commercial farms has not changed much. Those farms in economic classes 1, 2, and 6 increased in number slightly. The increased number of farms with sales of $50 to $2,499 (Class 6) may have been caused by an increase in part-time farming, since declines in Class 5 farms were registered in all five counties. The number of farms in economic Class 4 increased in four of the five study counties. In three of the counties, Laclede, Phelps, and Texas, the number of farms in Class 3 also increased.

1/ Haren, C. C. and R. B. Glasgow. Median Family Income and Related Data, by Counties. U.S.Dept.Agr.Statis.Bul. 339, Feb. 1964, pp. 93-108.

The number of people employed in agriculture declined in all the study counties between 1940 and 1960. Only in Texas County did the number increase between 1940 and 1950 (figure 2).

The value of agricultural production for the entire five-county area increased from 1950 to 1959, but by 1964 had started downward. All five counties showed an increase between 1950 and 1959, but only two of them, Laclede and Miller, continued this trend until 1964.

The total number of hired farm workers in the area has not fluctuated much since 1954 (table 2). From 1954 to 1959, two of the five counties showed an increase in hired farm workers, while from 1959 to 1964 only one county, Phelps, showed an increase.

Table 2.--Number of regular hired workers (employed 150 or more days) on farms, in five central Missouri counties, 1954, 1959, and 1964

County	1954	1959	1964
Laclede	31	62	49
Miller	65	57	39
Phelps	70	57	83
Pulaski	34	40	26
Texas	45	42	36
Total	245	258	233

Source: U.S. Census of Agriculture, 1954, 1959, 1964. Vol. 1, Part 17, Missouri.

POPULATION MIGRATION

The movement of population into or out of a rural area is due not only to the changing structure of the industry in the area but also to various rural or urban developments which attract or deter people. In 1954, McNamara, et. al., listed the following elements affecting the rural population of Missouri during the 1940-50 decade: 2/

1. Movement away from farms of entire farm-operator families who were not replaced.

2. Movement of young adults from Missouri farms.

2/ McNamara, Robert L., Peter New, and Donnell Pappenfort. Rural-Urban Population Change and Migration in Missouri, 1940-50. University of Missouri, Columbia, Mo. Bul. 620, Apr. 1954.

AGRICULTURAL EMPLOYMENT
IN FIVE MISSOURI COUNTIES
1,000 WORKERS
3
2
1
0
1940
1950
1960
LACLEDE
MILLER
PHELPS
PULASKI
TEXAS
U. S. DEPARTMENT OF AGRICULTURE
NEG. ERS 5568-68 (4) ECONOMIC RESEARCH SERVICE

Figure 2

3. Movement of farm wage workers from rural areas.

4. Movement of individuals and families from small villages to urban centers.

5. Movement of many persons with urban employment to outlying rural areas.

These five movements are operative today in much of Missouri. The number of all farms has decreased in all counties of the study area since 1950. Laclede County has experienced a net outmigration of both sexes up to age 60. Texas has had outmigration of all ages (except the 0-4 group) through age 64. Only one of the five study counties, Pulaski, experienced a net inmigration in all age groups during the 1950-60 decade. Much of the inmigration is due to the buildup of personnel at Fort Leonard Wood. The five study counties are more densely populated than most central Ozark counties primarily because of the location of a major Government installation (table 3).

Table 3.--Population densities of selected counties in central Missouri, 1960

Study counties	Inhabitants per square mile	Nearby counties	Inhabitants per square mile
Laclede	24.7	Camden	13.9
Miller	22.9	Crawford	16.6
Phelps	27.5	Dallas	17.3
Pulaski	84.5 1/	Dent	13.8
Texas	15.0	Hickory	11.0
		Maries	13.8
		Webster	23.3
		Wright	20.7

1/ Contains Fort Leonard Wood.

Source: U.S. Bureau of the Census. U.S. Census of Population: 1960. Number of Inhabitants, Missouri. Final Report PC(1)-27A.

Net migration rates indicate unusual population movement patterns in this area (table 4). The great difference in migration rates between the adjoining counties of Texas and Pulaski is due to the huge migration of military personnel into Pulaski County. Influencing factors such as the University at Rolla in Phelps County or the military base in Pulaski are not found in every county but their presence in these two counties has a strong influence on the migration rate.

Patterns of migration are influenced by highway systems as well as the location of urban areas such as St. Louis. A tracing of the route of

U.S. Highway 66 from Fort Leonard Wood to St. Louis shows that all counties through which the highway passes experienced a net inmigration from 1950 to 1960. Much of the gain can be explained by the high incidence of residential housing in small towns along this road. Workers in St. Louis live in these small towns and commute to their jobs. On the other hand, U.S. 66 from Fort Leonard Wood west to the Oklahoma line passes through five counties, all but one of which experienced a net outmigration. The exception, Greene County, contains the city of Springfield which is approximately one-eighth the size of St. Louis and yet is large enough to maintain a high level of social and physical services and facilities. In any case, the counties surrounding Greene have experienced a net outmigration of a greater magnitude than the State as a whole.

Table 4.--Migration rates for selected counties in central Missouri, 1950-60

Study counties	Rate 1/	Nearby counties	Rate 1/
Laclede	-10.4	Camden	10.3
Miller	- 8.2	Crawford	1.2
Phelps	1.2	Dallas	-14.4
Pulaski	274.3	Dent	-10.5
Texas	-14.9	Hickory	-17.7
		Maries	-11.4
		Webster	-17.6
		Wright	-18.3

1/ The net migration rates are estimates expressed as a percentage of the 1960 survivors of the 1950 population and births during 1950-60 decade.

Source: Economic Research Service, U.S. Department of Agriculture, Net Migration of the Population, 1950-60, by Age, Sex, and Color. Vol. 1, Part 2.

Laclede County

In the 10-year period ended in 1960, the population of Laclede County declined from 19,010 to 18,991, a loss of 19 people. Adjustments for births and deaths gives a total outmigration of 2,011.

The outmigration in Laclede County may be attributable to the following: (1) the dearth of employment opportunities in the county--most college and high school graduates must leave to secure a good job with adequate pay; (2) low wage rates relative to what can be obtained elsewhere, for example at Fort Leonard Wood; (3) few job opportunities for unskilled labor or high school dropouts.

Employers generally are hesitant about hiring high school dropouts.

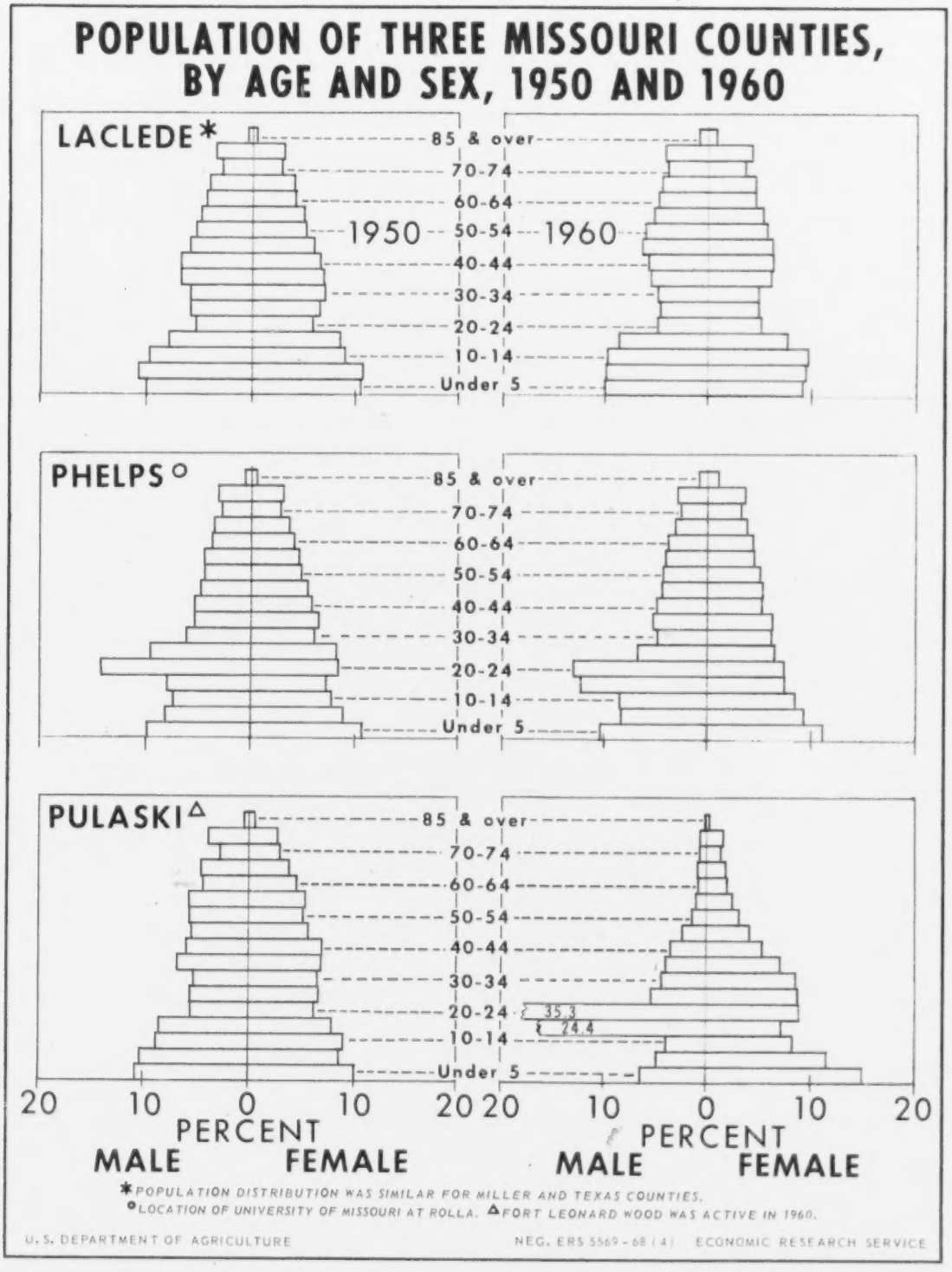
POPULATION OF THREE MISSOURI COUNTIES, BY AGE AND SEX, 1950 AND 1960
LACLEDE*
PHELPS°
PULASKI△
1950
1960
85 & over
70-74
60-64
50-54
40-44
30-34
20-24
10-14
Under 5
35.3
24.4
20 10 0 10 20 20 10 0 10 20
PERCENT
PERCENT
MALE FEMALE
MALE FEMALE
*POPULATION DISTRIBUTION WAS SIMILAR FOR MILLER AND TEXAS COUNTIES.
°LOCATION OF UNIVERSITY OF MISSOURI AT ROLLA. △FORT LEONARD WOOD WAS ACTIVE IN 1960.
U. S. DEPARTMENT OF AGRICULTURE
NEG. ERS 5569-68 (4) ECONOMIC RESEARCH SERVICE

Figure 3

In 1963, 35 percent of the 16 and 17 year old age group were not in school in Laclede County. Only three counties in the state had a larger percentage of this age group out of school.

The population of Laclede County is decreasing. Much of the loss occurred in the 20-to-30 year age group (figure 3). All groups through ages 55-59 experienced a net outmigration. Those in the 60-64 year and older age group had a net inmigration. Lebanon, the largest city, is growing at a modest rate, having increased from 6,805 people in 1950 to 8,200 in 1960.

Miller County

Outmigration occured in all age groups from age 5 to age 50 in the decade ending in 1960. Heaviest outflows occured in those aged 15 to 30 (table 5). Migration rates were similar for both sexes in these three age groups.

Phelps County

Phelps County is the home of the University of Missouri at Rolla. Present enrollment at this campus is approximately 5,000 students. Since the census of population considers students as residents of the area in which they are living while attending school, the migration rate for Phelps County is influenced by the increasing enrollment on the Rolla campus. The county experienced a net inmigration from 1950 to 1960: a population increase of 3,892 people, 607 of which were students. 3/

Another external influence on the 1960 population was the military buildup at Fort Leonard Wood. The population of nearby cities, including Rolla, fluctuates some with the number of personnel on base. When the 1950 census was taken, Fort Leonard Wood was on a standby basis with a minimum of personnel. By 1960, the number of military personnel at the Fort had increased considerably.

Phelps County had an unusually large number of 15-to-24 year olds in its population--expecially males--because of the large number of college students coming in to attend the University of Missouri at Rolla.

In 1950, 43.5 per cent of the population of Phelps County was classified as urban. 4/ Very little change occurred between 1950 and 1960.

The net migration rate was 1.2 for all ages. For males, it was 4.4

3/ Missouri County Data. Phelps County. Missouri Division of Commerce and Industrial Development.

4/ U.S. Bureau of the Census. U.S. Census of Population: 1960. Number of Inhabitants, Missouri. Final Report PC(1)-26A, pp. 27-14.

and for females -2.2. 5/ A heavy inmigration of those aged 15-24 was apparent (figure 3).

Those moving out of the county were primarily in the 30-40 year old group. As was true for Laclede County, inmigration was the order of the day for the older people. However, inmigration dipped into a lower age group in Phelps than in Laclede, with all age groups over 45 years reporting a net inmigration.

Pulaski County

Largely because of Fort Leonard Wood, Pulaski County reported a net inmigration from 1950 to 1960 for all age groups except males 75 and over. Its 1950 population was 10,392. By 1960 the population was 46,567. The impact of Fort Leonard Wood can be seen in the increase in the male population in the 15-29 year old age groups, which constitutes more than half of the total population (figure 3). 6/

Table 5.--Net migration rates by age groups for Miller and Texas Counties, Mo., 1950 and 1960

Age in 1960	Change from 1950 1/		Age in 1960	Change from 1950 1/	
	Miller	Texas		Miller	Texas
	Percent	Percent		Percent	Percent
All ages	- 8.2	-14.9			
0-4	1.3	5.7	40-44	- 4.7	- 8.5
5-9	- 2.9	- 9.2	45-49	- .9	- 5.5
10-14	- 4.9	- 5.6	50-54	3.3	- 3.7
15-19	-19.6	-23.7	55-59	7.8	- 7.2
20-24	-50.7	-58.9	60-64	11.7	- .7
25-29	-42.2	-45.7	65-69	9.4	- 1.4
30-34	- 5.7	-17.7	70-74	10.7	1.8
35-39	- .9	- 5.9	75 & over	- 1.0	- 8.4

1/ The net migration rates are estimates expressed as a percentage of the 1960 survivors of the 1950 population and births during the 1950-60 decade.

5/ Economic Research Service, U.S. Department of Agriculture, Net Migration of the Population, 1950-60, by Age, Sex, and Color. Vol. 1, Part 2, p. 284.

6/ Missouri County Data. Pulaski County. Missouri Division of Commerce and Industrial Development.

Texas County

Texas County had a net outmigration of its people from 1950 to 1960. The outflow was rather evenly divided between male and female. All age groups except the youngest and the 70-74 age group experienced outmigration (table 5). The largest outmigration occurred among the young people aged 20-24.

FORT LEONARD WOOD

The total post population of approximately 49,000 people can be placed in four categories:- (1) the permanent military personnel, (2) military trainees, (3) military dependents, and (4) civilian employees. The main group is the military contingent including both permanent and trainee personnel (table 6). The authorized size of this group is subject to change and is determined by the number of organized units assigned there by the Department of the Army. This varies with enlistments and the size of the draft. Hence, the total number of trainees varies from month to month.

As of December 31, 1966, the permanent military contingent included 1,102 officers and 11,187 enlisted personnel. The trainee load was about 24,000 troops.

The civilian population at the Fort as of December 31, 1966, totaled 12,493. Of this group 7,925 were military dependents. The remaining 4,568 were civilian employees residing off-post. More than half of these civilians were Civil Service employees. The remainder worked in the Post Exchange, Officers' Open Mess, and the Non-commissioned Officers' Open Mess. Employees working for private construction firms on the Fort totaled an additional 2,500 at the peak of the annual construction period.

The number of Civil Service employees fluctuates somewhat. Currently about 3,000 people are so employed. Of this group nearly half are classified as Wage Board employees, or Federal Government workers who are exempt from the Classification Act and whose assignment is a recognized trade, craft or skill.

The number of military dependents varies with the permanent military personnel on-post. Since the trainees must live in the barracks during basic training, any fluctuation in their number has little effect on the number of military dependents. However, a large increase in the number of trainees may call for more permanent personnel, in which case the number of military dependents may increase.

Military Payroll

Military pay includes the base pay of all permanent personnel, both officers and enlisted men, as well as any allowances to which they are entitled. All officers and enlisted men are entitled to a quarters

Table 6.--Military and civilian population at Fort Leonard Wood, Mo., January-March 1967

Item	Number of people
Trainees	24,171
Permanent personnel	12,289
Total military	36,460
Military dependents	7,925
Civil Service employees	3,025
Other civilian employees	1,543
Total civilian	12,493
Total post population	48,953

Source: Commander's Review of Program Progress, 3rd Quarter, Fiscal Year 1967. P. 2-1.

allowance unless provided with military housing on-post. All personnel assigned to the Fort are required to live on-post when quarters are available. Currently only a few enlisted men reside off-post.

The total payroll for fiscal year 1966 was in excess of $65 million (table 7). Most of the payroll goes to the 36,000 military personnel.

In a recent study involving the impact of Fort Devens on the neighboring town of Ayer, Mass., Terner found that about 40 percent of the married military personnel's pay was spent on-post, and 10 percent in the nearby town of Ayer. 7/ The other 50 percent was evenly divided between the area within a 15-mile radius (excluding the post and Ayer) and the area beyond the 15-mile ring. Similar results were obtained in a study by Laben of Pease Air Force Base, Portsmouth, N.H. 8/ Laben found that 38 percent of all spending by military personnel was on-post, 28 percent in nearby Portsmouth and the remaining 34 percent outside the post and Portsmouth. The geographic spending pattern for bachelor personnel in both studies differed primarily in the amount of money spent off-post, both close to the post and beyond a 15-mile radius.

7/ Terner, Ian Donald. The Economic Impact of a Military Installation on the Surrounding Area: A Case Study of Fort Devens and Ayer, Massachusetts. Research Report to the Federal Reserve Bank of Boston. No. 30-1965.

8/ Laben, Lawrence E. The Economic Impact of a Military Base. Graduate thesis at Massachusetts Institute of Technology, 1961.

In an area such as central Missouri, spending patterns may differ because of the limited opportunities for off-base expenditures. In rural areas, considerable travel is frequently necessary to obtain certain service, recreation, and entertainment facilities. Hence, more off-base spending may occur at places farther away from the post than would be the case for personnel at institutions located in more urban areas.

Table 7.--Payrolls at Fort Leonard Wood, military and civilian employees, fiscal 1966

Payroll	Amount
	1,000 dollars
Military	51,059
Civilian:	
Civil Service	10,679
Post Exchange	2,800
NCO Club	255
Officers Club	136
Central Post Fund	120
Fort Cab Company	329
Total payroll	65,378

Source: Office of the Comptroller, Fort Leonard Wood, Mo.

If the spending pattern of permanent military personnel at Fort Wood was the same as at Fort Devens, nearly $12 million would have been spent on the post in fiscal year 1966. Nearly $10 million would have been spent within a 15-mile radius of Fort Wood (table 8), since the second and third location items in table 8 could be combined. Because of the relative scarcity of business establishments within the 15-mile ring other than at Waynesville and the immediate area, the most likely distance groupings would be on-post, within 15 miles of the post, and beyond 15 miles of the post.

Data were not available to provide a precise breakdown of trainee payrolls. As an approximation, the average number of trainees in fiscal 1966 was multiplied by the annual pay of a trainee. Thus, 20,395 trainees times $90.60 times 12, or approximately $22 million, was paid to trainees. This leaves a $29 million payroll for the permanent personnel.

Because of the limited supply of adequate off-post housing, facilities are provided on-post for nearly all personnel. The location of their residence on-post thus reduces the amount of off-post spending by these people

for housing, utilities, gasoline, food, and items available at the Post Exchange.

No accounting has been made of saving by military personnel in the preceding table. The normal pattern seems to be utilization of the banking facilities on-post or in their home state or city. In most cases, monies put into savings would probably result in a leakage of funds away from the study area.

A recent study by the Department of Commerce indicates that the percentage of taxable income spent on-post may be higher than that shown in table 7. This study indicates that as much as 65 percent of the taxable income of military personnel is spent on-post. If this percentage of the military payroll were spent on-post at Fort Leonard Wood, the figures in the last column of table 8 would be raised to nearly $19 million for on-post spending. Data are not available to allow breakdown of the remaining 35 percent among the three other categories.

Table 8.--Spending patterns for Fort Devens, Pease Air Base, and Fort Leonard Wood, 1966

Spending	Fort Devens	Pease Air Base	Fort Leonard Wood	
	Percent	Percent	Percent	Million dollars
On-post.	41	38	41	11.89
At nearest town. . .	9	28	9	2.61
Within 15 miles except nearest town	25	20	25	7.25
Beyond 15 miles. . .	25	14	25	7.25
Total	100	100	100	29.00

Source: Terner, Ian Donald. A Case Study of Fort Devens and Ayer, Mass.

Civilian Payroll

The civilian payroll at Fort Leonard Wood consists of earnings of Civil Service workers, employees of the Post Exchange and Officers Open Mess, and workers employed by the various building contractors. The number fluctuates considerably from year to year and even from week to week.

Information was obtained from the U.S. Army Corps of Engineers in Kansas City concerning the number of contracts and the value of the work completed in fiscal 1965. Projects totaling almost $12.4 million were completed. Contractors are not required to furnish a labor vs. material breakdown. For most construction the cost of materials and labor is rather evenly divided. Peak employment totaled 2,489 in 1965. The number of people working full-time would be somewhat lower for much of the fiscal year.

The Post Exchange employs approximately 400 persons per year, of which nearly 77 per cent are civilian employees. The total payroll in 1965 was about $1.3 million, of which $1 million was paid to civilians.

The Officers Open Mess employed about 52 people. One-third of this group was employed on a part-time basis.

Impacted Area Funds

The schools in the area around Fort Leonard Wood have had a tremendous increase in enrollment. Waynesville, the seat of Pulaski County located 6 miles from the Fort, had 5,674 pupils in May 1965. About 80 percent were children of military personnel. Many of the parents of the remaining 20 percent were civilian workers at the Fort.

This district has eight elementary schools. Six are located on the Fort and the other two in Waynesville.

Transportation for all pupils in the area is paid by the Waynesville School District. It contracts for nine U.S. Army buses to transport children to schools on the Fort. Thirty buses are used to provide transportation for off-post children.

The Waynesville School District receives funds from the Federal Government under Public Laws 874 and 815. These laws were enacted to provide financial aid to school districts that provide educational facilities in areas of intensive Federal activity. Public Law 815 is designed to provide funds for construction of school buildings and facilities. Public Law 874 provides funds for any school district in which children of military personnel or civilian Government workers are enrolled, provided at least one of the parents is employed half-time by the employing agency.

For the school year 1964/65, 22 school districts in the area around Fort Leonard Wood received funds totaling nearly $1.03 million. Payments were $210 per year for each pupil whose parents were in the military service,

and $105 per year for each pupil whose parents worked half-time or more in a civilian capacity at the Fort. These figures were based on average daily attendance for each pupil. About 90-95 percent of the children in the district were there because of Federal activities which employed their parents. 9/ Waynesville received $795,060 in Public Law 874 funds in 1964/65. In 1963/64 they had received $665,634. These funds made up approximately 30 percent of the total receipts of the district.

Retail Sales Taxes

The direct revenue which accrues to the State of Missouri through sales taxes paid by residents of Fort Leonard Wood and nonresident employees is difficult to measure because of the tax-free status of most sales made on-post. No sales tax is charged on items sold in the PX or commissary. State road taxes and Federal gasoline taxes are collected.

The $14 million in sales by the PX in fiscal year 1966 would not show up in the data reporting collections of retail sales tax at the Fort. However, estimates by the Comptroller's office indicate that a tax of approximately 1 percent is paid by manufacturers and vendors on sales of merchandise to retailers on-post. This tax would amount to approximately $229,000 for fiscal year 1966. 10/

Using standard Internal Revenue Service guideline tables, the Comptroller's office at Fort Leonard Wood has estimated that the Missouri sales tax paid by all military personnel including trainees for off-post purchases totals $280,100. Other State taxes such as the gasoline tax, the sales tax on new and used vehicles registered on-post, and the State motor vehicle registration fee amount to $341,600.

The Comptroller's office estimates that sales tax receipts from spending by Fort Leonard Wood residents totaled $621,700 in 1966. To reach this level, retail sales of approximately $20 million were needed. Since the sales at the Post Exchange are not taxed these are in addition to the $20 million. This brings the total spent in Missouri by military personnel to $34 million. This is more than the total payroll as shown in table 8, which excludes trainee payrolls. This indicates that approximately two-thirds of all military payrolls at the Fort are spent in Missouri.

Very little Missouri State income tax is realized from the Fort since the majority of the military personnel claim some other State as their residence. Those claiming Missouri as their place of residence were primarily enlisted men. Because of this, and the $3,000 exemption in computing Missouri State income tax allowed resident military personnel, the amount of Missouri State income tax paid by military personnel at Fort Leonard Wood is small.

9/ College of Education, University of Missouri. School Survey of the R-VI Waynesville Public School, Pulaski County, Missouri. Fall 1963. Page 1.

10/ Office of the Comptroller, Fort Leonard Wood, Mo.

EMPLOYMENT MULTIPLIER

In measuring the economic impact of a particular industry, installation, or expenditure there is no exact method of determining how many new jobs will be created or how much new income will accrue to a particular area. One way to estimate the impact is through the use of the employment multiplier.

The employment multiplier estimates the change in total employment which occurs when new jobs are created. Both primary and secondary effects can be estimated. The new basic jobs are the primary effect and the jobs created to service these new employees are the secondary effect. A chain effect is started by the primary employees. These people need goods and services and the demand thus created increases the demand for employees to provide these added goods and services. The total of these two effects, the primary and the secondary, is the multiplier effect.

To estimate the multiplier effect, employment data by major occupational classifications are needed. Such data are available in the Census of Population (table 9).

These occupational classifications are then divided into two groups. The basic or non-service employment group contains such occupations as agriculture, forestry and fishing, mining, manufacturing, and public administration. The people in these occupations produce goods and services locally for consumption outside of the region. The remaining occupations are the derivative or service-oriented industries whose goods and services are consumed within the region.

Table 9.--Persons employed, by occupation, Pulaski County, Mo., 1960

Occupational classification	Number of persons	Occupational classification	Number of persons
Basic industries:		Derivative industries:	
Agriculture	367	Construction	443
Forestry and fisheries	16	Transportation	197
Mining	4	Communication	26
Manufacturing	542	Wholesale and retail sales	1,192
Public administration	642	Finance	88
		Services	1,076
		Utilities	59
		Industries not reported	233
		Total	4,885

Source: 1960 Census of Population, Mo.

In Pulaski County in 1960, a total of 4,885 persons were employed. Of this total, 1,571 were considered to be in the basic group and the remaining 3,314 in the derived group. The basic/derivative ratio is thus 1 to 2.11. This means that for every basic employee there are 2.11 persons employed in the derived or locally-consumed-service field. In 1960, there were 1,147 persons from Pulaski County working at Fort Wood. 12/ These are basic employees. Thus, 1,147 times 2.11 or 2,420 persons are needed to service the 1,147 basic employees and a total of 3,567 persons are employed in Pulaski County because of the Fort. Therefore, out of a total of 4,885 persons employed in the county in 1960, 73 percent of the jobs were related to or dependent on activities at Fort Leonard Wood.

This seems high but it should be remembered, for example, that 80 percent of the children in the Waynesville School District are from the Fort.

In 1966 a total of 1,550 persons from Pulaski County were employed at the Fort. If the same employment multiplier were used this would mean that employment in Pulaski County because of the Fort would total 4,820 (1,550 times 3.11) persons (table 10).

Civilian employment at Fort Leonard Wood has been increasing since 1960 for two reasons. First, the increased need for trained troops brought corresponding increases in civilian support personnel. Second, the army's civilianization program whereby military personnel are replaced by civilians where feasible. Thus, it seems reasonable to assume that a multiplier of equal or even larger magnitude was operative in the study area in 1966.

12/ The county of residence of persons employed at Fort Leonard Wood was not available for 1960. The assumption was made that distribution by residence would be similar to that in 1966. Hence, the number of persons from Pulaski County working at the Fort was obtained by assigning the employees to counties in the same proportion as they appeared in 1966.

Table 10.--Employed persons by county, and employment attributable to activities of Fort Leonard Wood, 1960 and 1966

Item no.	Item	Study county				
		Laclede	Miller	Phelps	Pulaski	Texas
	1960 county employment:					
1	Basic	2,593	2,128	2,684	1,571	3,170
2	Derivative	3,822	2,817	5,431	3,314	2,842
3	Total	6,415	4,945	8,115	4,885	6,012
4	Multiplier 1/	2.47	2.32	3.02	3.11	1.89
5	Civilians employed at FLW, 1960	311	98	339	1,147	270
6	Total employment attributable to FLW, 1960 2/	768	227	1,023	3,567	510
7	Percentage of total county employment attributable to FLW activities, 1960	11.97	4.59	12.60	73.02	8.48
8	Civilians employed at FLW, 1966	421	132	459	1,550	365
9	Total employment attributable to FLW, 1966 3/	1,040	306	1,386	4,820	690

1/ Item 2 divided by item 1, plus 1.
2/ Item 4 times item 5. This gives basic employment plus the secondary employment which is generated by Fort activities.
3/ Item 4 times item 8. See note 2.